

REMARKS

In the Office Action of March 26, 2008, Claims 23-30 were rejected under 35 USC § 112 and 35 USC § 101. Claims 23-30 have been cancelled.

Applicant therefore believes that the rejection of claims 23-30 under 35 USC § 112 and 35 USC § 101 is now improper and respectfully requests withdrawal of the rejection. Early action to that end is earnestly solicited.

Claims 6 and 9-20 were previously cancelled.

Claims 1-5, 7-8 and 21-30 were rejected under 35 USC § 103, as being unpatentable over Hauner, in view Broverman and Hutcherson. This rejection is respectfully traversed.

Regarding independent Claim 1, indeed Hauner (US 5,429,656) teaches an electrical material comprising a matrix made of a conductive metal with a refractory fraction, but does not teach the presence of an "unstable fraction having the property of decomposition between the operating temperature of the electrical contact and the melting point of said metal, with the release of a gas capable of destabilizing an electric arc."

Indeed Broverman (US 3,641,298) teaches an electrical contact material with a conductive metal with an unstable fraction of metal hydride which releases hydrogen. But the teaching of Broverman is only the effects of hydrides on surface protecting of copper.

But, the problem to solve in Broverman is that the copper, when used as an electrical contact material, readily oxidizes at its active face. Such oxidation causes rapid deterioration of the material at its active face and erratic operation of the material in its use (see col.1 lines 9-13). The solution suggested by

Broverman is to provide a reducing atmosphere at the active surface of the material (see col.1 lines 21-23).

This problem of copper oxidation is completely different from the problem to solve in the present invention, which is to rapidly extinguish an electric arc occurring between two contact elements. Broverman does not teach that the released hydrogen is able to destabilize an electric arc and does not describe any arc extinction effects at switching.

Therefore, one skilled in the art has no motivation to use the teaching of Broverman to solve the problem of rapid extinction of an electric arc. An a posteriori analysis should be avoided.

Moreover, according to the Examiner, it is known from Hutcherson that the heating of hydride materials in an electrode by an electric arc releases hydrogen, capable of destabilizing said arc.

But the teaching of Hutcherson can be used only in specific conditions, which are the use of a high-pressure chamber, and the electrodes being placed in a insulating housing containing high-pressure hydrogen gas, as shown by Figure 3. According to Hutcherson, the exact teaching is that, when the electrodes are placed in the insulating housing containing hydrogen, the arc heats the hydride material and raises the gas pressure, helping to extinguish the arc (col. 5, lines 41-44). The raising of the gas pressure is allowed because there is a high pressure hydrogen atmosphere surrounding the electrodes.

For one skilled in the art, the teaching of Hutcherson can be reproduced only by using said insulating chamber, in order to control the pressure of hydrogen.

In the present invention, the electrical contacts are used in electrical devices present in cars, and should have a very small size. The use of such an insulating chamber, which would increase the size of the device, is not possible. Moreover, the devices described in Hutcherson never can work in low voltage devices as do the contacts of the present invention, in order to fulfill the demands concerning UL or IEC standards, because the electrical conductivity of such low voltage devices is far away from that which is necessary for the Hutcherson devices.

Therefore, one skilled in the art has no motivation to use the teaching of Hutcherson to produce low voltage contacts, as in the invention.

Moreover, even if one skilled in the art might have combined the teaching of Hutcherson with the teachings of Broverman and Hauner, this combination would have introduced the elements of the contacts or electrodes into an insulating chamber, as shown by Figure 3 of Hutcherson. Such a chamber could not be used in the present invention. Therefore, one skilled in the art would not have produced the electrical contact material of the invention.

Regarding independent claim 21, this claim has been modified in order to specify that the unstable fraction has the property of decomposing between the operating temperature of the electrical contact and the melting point of the silver, with the release of a gas capable of destabilizing an electric arc.

Claim 21, as amended, therefore relates to an electrical contact material comprising a matrix made of silver. When used in an electrical contact, silver does not oxide, in the opposite to copper.

As explained above, Broverman teaches how to solve the problem of copper oxidation in electrical contact, such problem being nonexistent in the silver contact.

Therefore, one skilled in the art has no motivation to use the teaching of Broverman to solve the problem of rapid extinction of an electric arc in a silver contact.

As said above, the teaching of Hutcherson does not allow one skilled in the art to obtain the present invention.

New claims 31 and 32 have been added to describe the feature wherein the unstable fraction decomposes in air between the operating temperature of the electrical contact and the melting point of the metal, with the release of a gas capable of destabilizing the electric arc in air. This feature of the invention is not disclosed or made obvious by the cited references, either alone or in combination.

In view of the foregoing, it is believed that none of the references, taken alone or in combination, disclose or make obvious the claimed invention. The Applicant therefore believes that the unpatentability rejection under 35 U.S.C. 103 based on all of the cited art is improper. Applicant respectfully requests withdrawal of the rejection. Early action to that end is earnestly solicited.

Accordingly, reconsideration of the application and allowance of the claims now presented are respectfully requested. If for any reason the application is not in condition for examination and allowance, the undersigned would appreciate a call to the telephone number given below, or an email to the address given below.

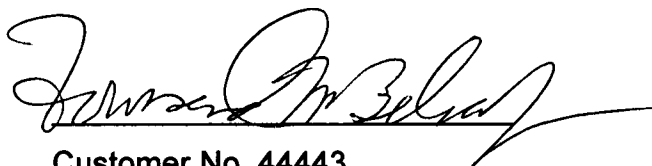
DEPOSIT ACCOUNT AUTHORIZATION

It is not believed that an extension of time or any fees, other than those presented herewith, are required. However, in the event that extensions of time are necessary, then such extensions of time are hereby petitioned under 37 CFR 1.136(a), and any additional fees required for consideration of this paper, including fees for the net addition of claims, are hereby authorized to be charged to our Deposit Account No. 080719.

If any designated extension fees, or other designated fees, are not required or are in excess of the amount required, the Director is hereby authorized to credit any such overpayment to Deposit Account No. 080719.

Respectfully submitted,

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